



**16609174**  
Edition 1  
September 2008

# Handle Assembly Instructions

QMM

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# Maintenance Information



Save These Instructions

 **Ingersoll Rand**

**⚠ WARNING**

Always wear eye protection when operating or performing maintenance on this tool.  
Always turn off the electrical and air supply and disconnect the electrical and air supply hose before installing, removing or adjusting any accessory on this tool or before performing any maintenance on this tool.

**Description**

The handle is defined to be configurable by the regional solution centers in a short period of time. The handle has been designed in various sub modules that makes it configurable for various applications.

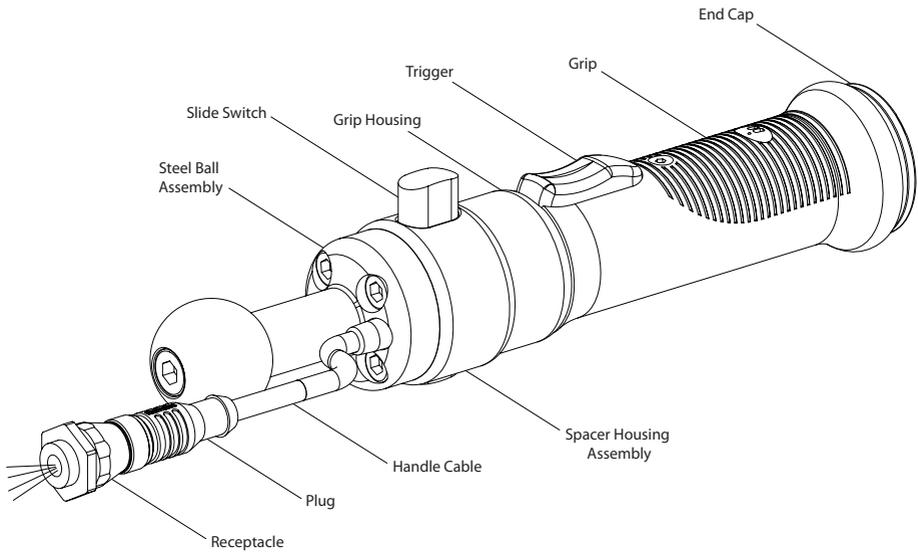
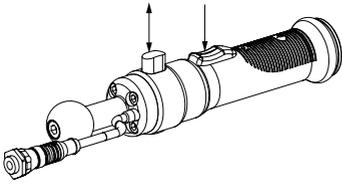
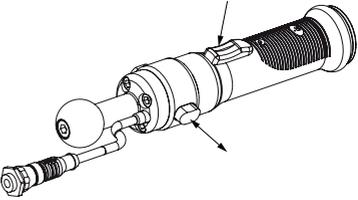
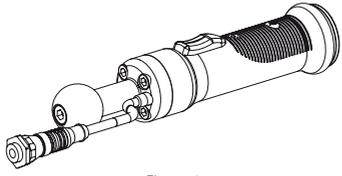
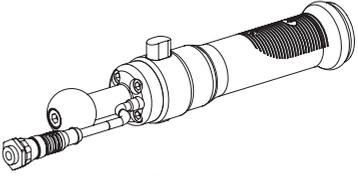
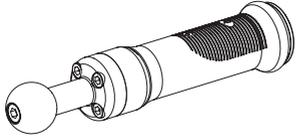
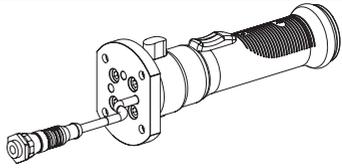
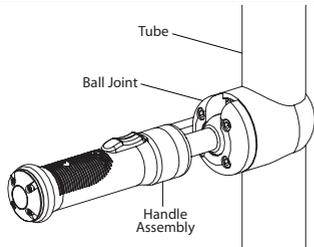
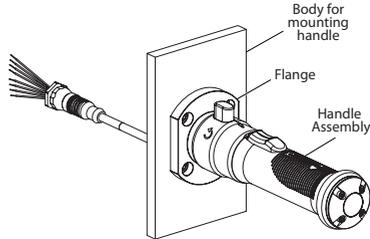


Figure 1

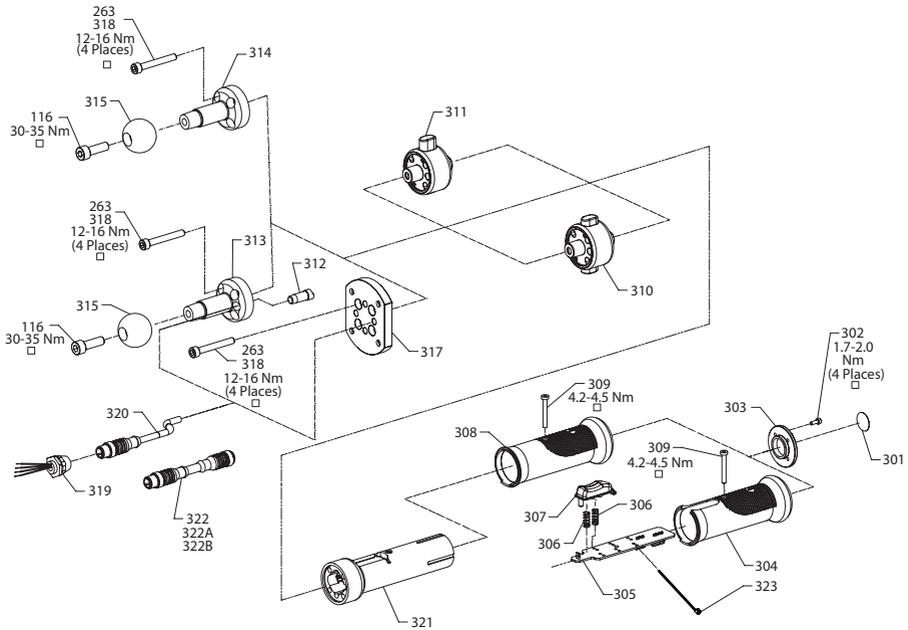
## Handle Configurations

<p style="text-align: center;"><b>Throttle Handle Inline</b></p>  <p style="text-align: center;">Figure 2</p> <p><b>Description:</b> The line of action for Trigger and the Slide switch are parallel (in the same line).</p>	<p style="text-align: center;"><b>Throttle Handle Perpendicular</b></p>  <p style="text-align: center;">Figure 3</p> <p><b>Description:</b> The line of action of Trigger and Slide switch are perpendicular in direction.</p>
<p style="text-align: center;"><b>Throttle Handle without Slide Switch</b></p>  <p style="text-align: center;">Figure 4</p> <p><b>Description:</b> This handle has only Trigger Switch.</p>	<p style="text-align: center;"><b>Throttle Handle without Trigger</b></p>  <p style="text-align: center;">Figure 5</p> <p><b>Description:</b> This configuration has only Slide switch.</p>
<p style="text-align: center;"><b>Dead Handle</b></p>  <p style="text-align: center;">Figure 6</p> <p><b>Description:</b> The dead handle has no trigger and no slide switch action. The main purpose of this handle in the fixture is to provide additional support to the hands of the user.</p>	<p style="text-align: center;"><b>Handle with Flange</b></p>  <p style="text-align: center;">Figure 7</p> <p><b>Description:</b> This handle is used where ball joint mount is not required. This handle is designed in such a way that it is useful for customized Power Heads other than QMM Fixtures.</p>

## Mounting Options

<p style="text-align: center;"><b>Tube Mounting</b></p>  <p style="text-align: center;">Figure 8</p>	<p style="text-align: center;"><b>Flange Mounting</b></p>  <p style="text-align: center;">Figure 9</p>
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## Handle Main Exploded View



□ Apply servicable thread locking compound.

Figure 10

## Handle Main Parts List

Item	Part Description	Item	Part Description
*	<b>Handle Assembly</b>	310	Switch Assembly-Momentary
116	Cap Head Screw (M8 x 1.25 x 25)	311	Switch Assembly-Detent
263	Cap Head Screw (M6 x 1 x 20)	312	Strain Reliever
301	Handle Label Kit	313	Bracket-Throttle Handle
302	Cap Head Screw (M3 x 0.5 x 8)	314	Bracket-Dead Handle
303	Handle End Cap	315	End Ball
304	Grip-Throttle Handle	317	Handle Flat Mount Flange
305	Handle Main PCB Assembly	318	Cap Head Screw (M6 x 1 x 45)
306	Spring	319	Receptacle
307	Trigger	320	Plug-(Cord Length 2 Meter)
308	Grip-Dead Handle	321	Handle Grip Housing
309	Low Cap Head Screw (M4 x 0.7 x 30)	323	Cable Tie

Refer Latest PL manual (16607103) or Assembly no. 16602930 for BOM of Particular Handle Configuration.

## Slide Switch Housing Assembly Exploded View

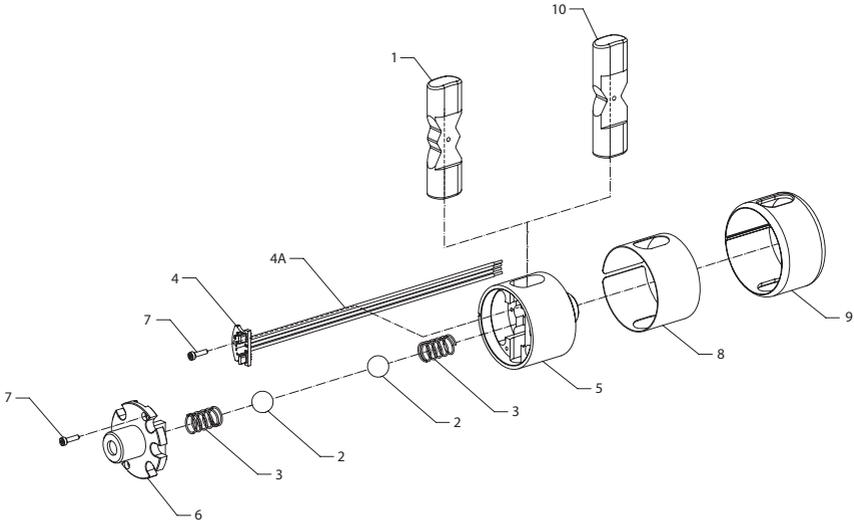


Figure 11

### Slide Switch Housing Assembly Parts List

Item	Part Description	Item	Part Description
1	Slide Switch-Magnet Assembly Momentary	6	Spacer Housing Cover
2	Slide Switch Ball	7	Cap Head Screw (M2 x 8)
3	Slide Switch Spring	8	Label
4	Small Board Assembly	9	Transparent Sleeve
5	Slide Switch Housing	10	Slide Switch-Magnet Assembly-Detent.

### Assembly steps for Slide Switch Housing Assembly

- Insert Wires (4A) into hole provided below PCB seat of housing Slide Switch Housing (5) (hole near to center of housing).
- Assemble Hall Sensor PCB Assembly (4) using fastener Cap Head Screw (7) in Slide Switch Housing (5).
- Stick Label (8) on Slide Switch Housing (5), (Label cut out should match housing slot).
- Insert Transparent Sleeve (9) over Slide Switch Housing (5).
- Insert Slide Switch Spring (3) into Slide Switch Housing (5).
- Place Slide Switch Ball (2) on Slide Switch Spring (3).
- Assemble Slide Switch-Magnet Assembly Momentary (1) or Slide Switch-Magnet Assembly-Detent (10) into Slide Switch Housing (5) keeping the steel ball Slide Switch Ball (2) pressed manually.
- Assemble Slide Switch Ball (2), Slide Switch Spring (3) and Slide Switch Housing Cover (6) using Cap Head Screw (7) in Slide Switch Housing (5).
- Apply Torque of 0.5 to 0.55 Nm to Cap Head Screw (7) using serviceable thread locking compound.

## Trigger Handle Assembly Exploded View

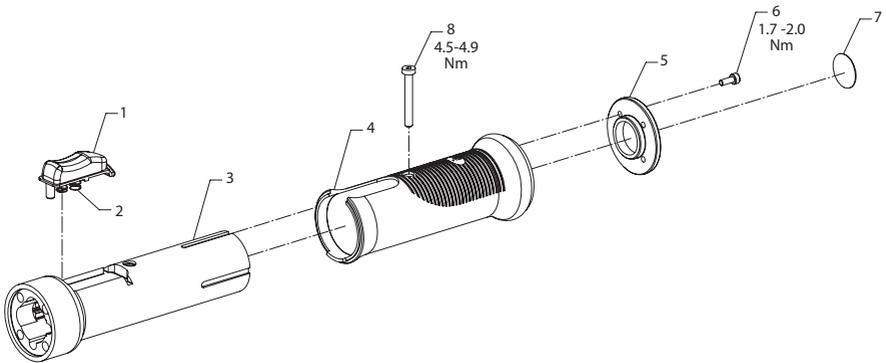


Figure 12

### Trigger Handle Assembly Parts List

Item	Part Description	Item	Part Description
1	Trigger Switch	5	End Cap
2	Trigger Spring	6	Screw (M3 x 8)
3	Handle Grip Housing	7	Handle Label Sheet
4	Handle Grip	8	Bolt (M4 x 30)

### Assembly steps for Trigger Handle Assembly

- Assemble Trigger Spring (2) to Trigger Switch (1) through molded guide pillar.
- Insert the above assembly into the slot provided in Handle Grip Housing (3).
- Insert Handle Grip (4) over the above assembly such that it retains Trigger Switch (1) from jumping out of Handle Grip Housing (3).
- Assemble End Cap (5) into the rear end piloting diameter of Handle Grip Housing (3).
- Now clamp the above assembly with Screw (6) with a torque of 1.7 Nm to 2.0 Nm.
- Insert the PCB assembly (not shown in the above Figure 12) into the slot of Handle Grip Housing (3), (See Figure 2 for reference).
- Fastener Bolt (8) should be used to arrest PCB Assembly inside handle Grip housing after assembly described in **Handle Wiring from Small Board to Main Board** (Figure 13).

## Handle Wiring from Small Board to Main Board Exploded View

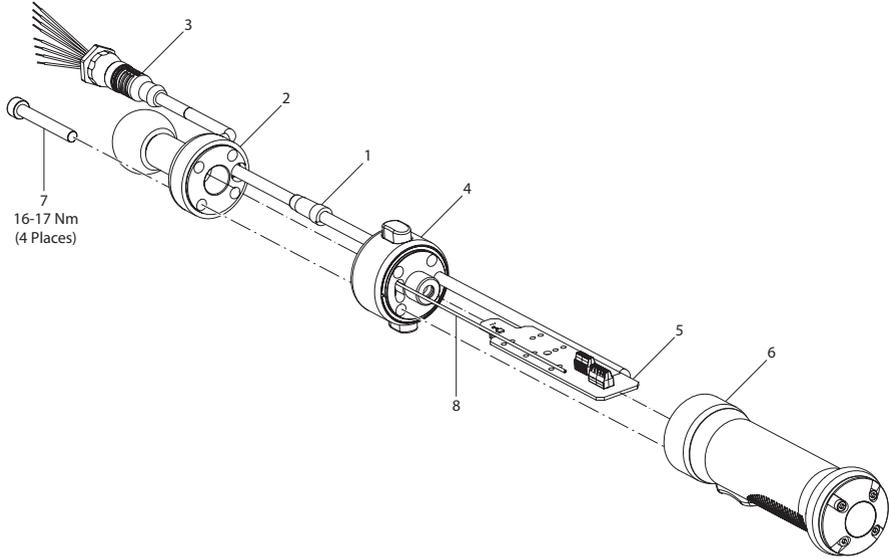


Figure 13

### Handle Wiring from Small Board to Main Board Parts List

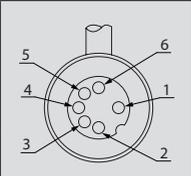
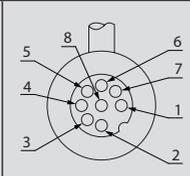
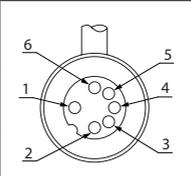
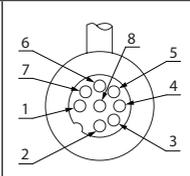
Item	Part Description	Item	Part Description
1	Reliever	5	Main PCB for Handle
2	Handle Steel Ball Assembly	6	Trigger Handle Assembly
3	Plug - Turck RSC 8T-*	7	Cap Head Screw (M6 X 45)
4	Slide Switch Assembly	8	Wires from Small Board

### Assembly steps for Handle Wiring from Small Board to Main Board

- Insert Reliever (1) into the hole provided in Handle Steel Ball Assembly (2).
- Route the wire Plug - Turck RSC 8T-\* (3) through the hole in Handle Steel Ball Assembly (2), Reliever (1) and Slide Switch Housing Assembly (4), Screw terminating it on Main PCB for Handle (5) Terminals as per color coding on PCB.
- Use one or more cable ties to secure wire on main PCB.
- Screw terminate the Wires from Small Board (8) coming from Slide Switch Housing Assembly (4) to the terminal block of Main PCB for Handle (5) as per the color coding on main PCB.
- Use one or more cable ties to secure Wires from Small Board (8) on main PCB.
- Now insert Main PCB for Handle (5) into the slot provided in Trigger Handle Assembly (6).
- Secure PCB inside handle grip housing with Fastener Bolt (8) shown in Figure 12.
- Assemble Handle Steel Ball Assembly (2), Slide Switch Housing Assembly (4) and Trigger Handle Assembly (6) with Cap Head Screw (7), with thread locking compound.
- To change orientation of slide switch from inline to perpendicular w.r.t trigger switch, keep Main PCB for Handle (5) and Trigger Handle Assembly (6) in same orientation and rotate Slide Switch Housing Assembly (4) and Handle Steel Ball Assembly (2) to 90° before making final assembly with 4 No. of M6 fasteners 7.
- See Figure 10 for Flange mounting option assembly.

## Handle Wire Identification

Receptacle wire color coding	Connection	Actuator
Blue	24 Volt DC input	
Green	GND input	
White	Output 24 Volt DC Signal (Rev/Down)	Slide Switch (Left)
Brown	Output 24 Volt DC Signal (Fwd/UP)	Slide Switch (Right)
Yellow	Output 24 Volt DC Signal (Trigger)	Trigger
Red	Drain (Earth)	
Pink	Not in use	
Grey	Not in use	

Female		Male		Pinout	
				1. Wh	5. Gy
				2. Bn	6. Pk
				3. Gn	7. Bu
6-pin	8-pin	6-pin	8-pin	4. Ye	8. Rd

## Related Documentation

For additional information refer to:  
 Product Safety Information Manual 16607095.  
 Product Information Manual 16607228.  
 Parts Information Manual 16607103.

Manuals can be downloaded from [www.irtools.com](http://www.irtools.com).

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